REMARKS/ARGUMENTS

This is in response to the Office Action dated March 6, 2008. Claims 1-24 are pending. Claims 1-24 stand rejected in the outstanding Office Action.

The rejection of independent claim 1 under U.S.C. § 103(a) as being unpatentable over Truchsess (US 5,734,726) in view of Comair et al. (US 2003/0045956) is respectfully traversed.

Claim 1 recites the limitation "calculating a read start address of selected sound data in accordance with a ratio of a current moving speed of the object in the game space to the maximum speed; a sound data reading section for sequentially reading selected sound data from the read start address calculated by the read start address calculating section". It is respectfully submitted that Truchsess in view of Comair lacks this feature.

Truchsess discloses a method for producing sound that simulates the sound of an engine. Various stored sound segments are played in a predetermined order to simulate the sound of an engine under control of a user who operates a switch, simulating an accelerator pedal. A typical sequence of sound segments stored digitally in memory is shown in Fig. 1, where if, for example, segments 2-5 are played sequentially then an acceleration sound is reproduced. Should the switch be activated during an acceleration or deceleration period, thus causing an interruption of the ongoing process, e.g., going from acceleration to deceleration or vice versa, a jump vector instructs the microcontroller as to which sound segment will be played next. The criterion for choosing the next sound segment is closeness in sound between the sound segment just before the interruption and the chosen sound segment. For example, if the switch is activated during the playing of sound segment 3, e.g., in the middle of an acceleration period, then the jump vector chooses sound vector 9, whose sound is the closest to sound segment 3, to be the next played

sound segment. Subsequently, the sound segments following sound segment 9 are played, see Fig. 2A.

The Examiner acknowledged that Truchsess does not teach a moving speed calculating section for, based on the acceleration operation input data and the deceleration operation input data input via the operating section, calculating a moving speed of the object in the game space; or calculating a read start address of selected sound data in accordance with a ratio of current moving speed of the object in the game space to the maximum speed. The Examiner then turned to Comair for the missing limitation.

Comair generally discloses a method for generating complex computer generated sounds used in video games. Waveforms in a sound model are selected to represent various sounds that can occur in real world, for example, the waveform could represent the sound of a vehicle engine. A waveform in the sound model then has its pitch and volume parameterized using particular parameters. For example, one parameter associated with the an engine sound waveform can be the speed at which the virtual car is moving in the game space or the angle at which the virtual car hits another car or other obstacle ([0009], [0026]). Next, for each waveform a pitch and a volume envelope is defined and stored, e.g., a functional relationship between the pitch and the volume of each waveform and the parameter(s). For example, Figs. 3 and 4 show the dependence of the volume of a waveform representing a collision sound on the angle and the speed of the virtual car ([0028]-[0029]). The method then combines the effects of the parameters on the waveform to produce a final sound. For example, if the car hits the wall at 100 mph and at an angle of 0.85, the final waveform for the collision sound would be determined by multiplying the parameterized volumes, e.g., 0.5x0.85=0.485, assuming constant pitch ([0030]). In other words, a single sound, such as a car hitting a wall, is represented as multiple

waveforms whose pitches and volumes are adjusted by one or more parameters. The adjusted waveforms are then mixed together to create a final sound.

The Examiner stated that Comair discloses reading from memory a sound wave dependent of various parameters, including speed, and alleged that this inherently includes calculating an address to read from a finite number of stored sound waves, from minimum to maximum speed, citing Fig. 4.

Fig. 4 represents a volume envelope for a sound waveform based on the parameter "speed". Based on this envelope, the volume of the sound waveform is adjusted using a current value of the speed. The same is done based on the pitch envelope. The adjusted waveforms are then mixed together to obtain the final sound. The process is then repeated using the next current value of the speed parameter ([0032], Fig. 8).

In Comair's method, after the current speed is determined, the volume and the pitch of the stored sound waveform is calculated based on the speed envelope and combined with the volume and pitch calculated based on other parameter envelopes, e.g., angle. The output sound is the result of the above mixing. This is repeated for the next value of the speed and the other parameters. Comair does not teach accessing stored sound data and selecting a specific sound data segment based on the ratio of the current speed and the max speed and subsequently reading in a sequential way the stored sound segments having sequential addresses after the address of the chosen specific sound data (having the read start address), see para. [0072]. Comair teaches mixing the entire sound waveforms after they are adjusted based on the various parameters and outputting the resulting waveform, and not going into an original waveform and reading it, starting from a chosen point based on the ratio of the current speed to the maximum speed. In contrast, in an example embodiment, the claimed program calculates the moving speed of the

object car and correspondingly determines the read start address for sequentially reading the sound data from the various sound data addresses following the read start address.

Furthermore, one would not look into Comair to modify the method of Truchsess since Truchsess is concerned with interrupting an acceleration or deceleration interval in a single waveform and continuing with a closely matched sound segment, whereas Comair is concerned with modifying entire sound waveforms based on various parameters and combining them to produce a complex sound effect. As noted above, the Examiner admits that Truchsess fails to disclose a ratio of the current moving speed of the object to the maximum speed. Comair also does not disclose this feature. Therefore, even if would combine Truchsess and Comair, the combination fails to disclose this feature.

For the above reasons, claim 1 and claims 11 and 21, which include similar limitations as claim 1, are allowable.

It is respectfully requested that the rejection of dependent claims 2-10, 12-20 and 22-24, all dependent from claims 1, 11 or 21, also be withdrawn. In this regard, the tertiary reference of Klayman (US 5,784,468) fails to resolve the above described deficiencies of the Truchsess and Comair combination.

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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